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NOTES ON APHIDS.

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Nectarosiphum rubicola Oestl., with description of the male.

Alate viviparous female. General color, pale or green. Length of body, 3.8 mm. Width of abdomen, 1.6 mm. Wing expansion, 4.3 mm. Head, pale or green, broader than long, width between the eyes, .45 mm. Beak, reaching second coxa, near the tip dusky. Antenna situated on frontal tubercle, pale except dusky rings at the distal end of III, IV and V, VI including spur dusky, length of articles: III, 1.1 mm.; IV, .7 mm.; V, .55 mm.; VI, .3 mm.; spur, 8 mm. Sensoria about 14 on III, one each on IV and V. Prothorax wider than long, width, .6 mm., pale. Mesothorax slightly dusky, border with muscle lobes amber, width, 1 mm. Metathorax slightly dusky. Legs, distal one fifth the length of tibia and entire tarsi dusky, rest pale. Abdomen, pale, inflated. Cornicles mostly dusky, often basal half pale, length, 1 mm. Cauda, pale. Wings hyaline with smoky area near the tips of forewings, expansion: forewing, 4.9 mm., hind wing, 2.7 mm.

Apterous viviparous female. General color, pale or green. Length of body, 2.7 mm. Width of abdomen, 1.3 mm. Head, pale, broader than long. Beak reaches to third coxa, pale except apical half of third joint which is dusky. Length of antennal joint: III, .9 mm.; IV, .6 mm.; V, .55 mm.; VI, .2 mm.; spur, 1 mm. Prothorax, pale. Thorax and abdomen, pale. Tibia dusky. Rest of legs color of the body. Cornicle, dark, slightly swollen

as in alate form, 1.2 mm. long. Cauda, pale, longer than wide at base.

Host plant: Thimbleberry.

Locality: University of California campus, Berkeley, Calif.

Date of collection: March 20, 1915.

Male (alate): Alate, wing venation as in the alate viviparous female. General color, rosy. Body small, length, 1.6 mm., width of abdomen, .5 mm. Head black or at least dusky, broader than long, length, .3 mm. between the eyes. Rostrum beyond the third coxa. Eyes black, large. Antenna black except lighter base of III. Length of joints, III, 1.1 mm.; IV, .8 mm.; V, .7 mm.; VI, .3 mm.; spur, 1.2 mm. Sensoria on antennal joints distributed as follows: III, 5; IV, 15; V, 15. Cornicles, black, .6 mm. long. Style dusky, small. Mesathorax black, length, .5 mm. Metathorax, black. Abdomen cylindrical, not much inflated, rosy or light red.

Anteroventrally to the cauda there is a pair of somewhat horny cerci.

Host plant: Thimbleberry (*Rubus parviflorus* Nutt.).

Locality: University of California campus, Berkeley, Calif.

Date of collection: April 4, 1915.

NOTES.—So far as my knowledge goes, *N. rubi* is one of the earliest male producers, the other being *Myzus ribis*. Although I have never studied the life history of this particular species, I had the opportunity of observing the emergence of stem-mothers from their eggs about the twentieth of February. The males were found only on the underside of already tinged leaves, while parthenogenetic forms were infesting terminal shoots and green, tender leaves. Not a single specimen of oviparous female or of egg could be found on the same or nearby plants at the time when males were abundant. Although the male of this species can be distinguished from its sisters by smaller size, darker coloration, numerous antennal sensoria, presence of paired cerci, etc., the only character common to the males of all Aphids, it must be mentioned, is the presence of cerci. To illustrate, the males of *Aphis pomi* are alate, and lighter than the alate viviparous form. The males of *Rhopalosiphum lactucae* are as large as the alate viviparous females. Again, the males of *Calaphis betuloecolens* have the same number of antennal sensoria as the alate sisters.

Chaitophorus coleoptis sp. nov.

Alate viviparous female. Body small, length including cauda, 1.4 mm. Width of abdomen, .7 mm. Wing expansion, 2.3 mm. Head broader than long, slightly narrower than prothorax, width including eyes, .45 mm., dusky. Beak reaching to second coxa, tip dusky. Antenna arising from side of head, six articulated, third joint subequal to spur, apical half of fifth together with sixth including filament dusky, rest the color of the body. Length of articles: III, .4 mm.; IV, .23 mm.; V, .2 mm.; VI, .1 mm.; filament, .4 mm. Eyes dark red. Prothorax dusky, very short, width, .47 mm. Mesothorax dusky, width, .65 mm. Metathorax dusky. Front leg pale except tarsi which is dusky, middle and hind legs of the color of body with femora and tarsi dusky. Length of femora: front, .25 mm.; middle, .35 mm.; hind, .45 mm. Length of tibia: front, .35 mm.; middle, .50 mm.; hind, .75 mm. Abdomen, pale with a large middle dorsal patch of dusky or several transverse dusky bands, and also marginal dusky patch, somewhat hairy. Cornicles pale, constricted about the middle, slightly longer than wide at base. Style dusky, rounded at tip and constricted at base, provided with long spines. Anal plate pale, apex nearly straight, but a little curved in, never rounded nor much indented. Wings small, usually normal in venation, often one of the two varies in venation but cases in which both right and left wings are abnormal is rare.

Apterous viviparous female. Body with spines, pale, small, length, 1.45 mm. Width of abdomen, .9 mm. Head the color of body. Eyes dark red. Antenna arising from side of head; sixth including spur and apical half of fifth dusky, the rest color of head, length of articles: III, .4 mm.; IV, .23 mm.; V, .2 mm.; VI, .1 mm.; spur, .4 mm. Thorax and abdomen compressed, hairy, pale. Legs pale, except dusky tarsal joints. Cornicles pale, shape as in alate form, style, with spines, pale, anal plate as in alate.

Host plant: *Abies balsami.*

Locality: San Francisco.

Date of collection: April 10, 1915.